

Amendments to the Claims:

This listing of claims replaces all prior versions and listings of claims in the application:

Listing of Claims:

1. (Original) A method of producing a carbide-containing ferroalloy welding consumable material for subsequent use for producing a hardfacing on a suitable substrate comprising the steps of:
 - (a) forming a homogeneous melt that has a required concentration of key elements, such as carbon, chromium and manganese, for a chromium carbide-containing ferroalloy welding consumable material; and
 - (b) forming a solid carbide-containing ferroalloy welding consumable material from the melt.
2. (Currently Amended) The method ~~defined in~~ of claim 1 wherein step (a) comprises forming the homogeneous melt from solid feed materials.
3. (Currently Amended) The method ~~defined in~~ of claim 1 ~~or claim 2~~ wherein step (a) comprises forming the homogeneous melt from a chromium-containing ferroalloy material.
4. (Currently Amended) The method ~~defined in any one of the preceding claims~~ of claim 1 wherein step (a) comprises forming the homogeneous melt from a source of free carbon.
5. (Currently Amended) The method ~~defined in any one of the preceding claims~~ of claim 1 wherein step (a) comprises adding graphite to the melt to supersaturate the melt with carbon.
6. (Currently Amended) The method ~~defined in any one of the preceding claims~~ of claim 1 wherein step (a) comprises forming the homogeneous melt from an iron-containing material

(other than a chromium-containing ferroalloy) such as scrap steel or scrap high chromium white cast iron, to dilute the chromium concentration in the melt.

7. (Currently Amended) The method ~~defined in any one of the preceding claims~~ of claim 1 wherein step (a) comprises holding ~~the a~~ melt temperature ~~for a relatively long time (nominally 30 to 60 minutes)~~ to dissolve carbon in the melt to produce a required concentration of chemically combined carbon in the solid ferroalloy welding consumable material formed from the melt in step (b).

8. (Currently Amended) The method ~~defined in any one of the preceding claims~~ of claim 1 comprising de-gassing the melt formed in step (a) so that the solid ferroalloy welding consumable material formed in step (b) facilitates a stable welding arc in a subsequent hardfacing operation and thereby minimises porosity in the resultant hardfacing and eliminates ejection of ferroalloy powder from the weld pool.

9. (Currently Amended) The method ~~defined in any one of the preceding claims~~ of claim 1 comprising removing slag from the melt formed in step (a) so that the solid ferroalloy welding consumable material formed in step (b) minimises the presence of non-metallic impurities in the resultant hardfacing weld deposit formed in the subsequent hardfacing operation.

10. (Currently Amended) The method ~~defined in any one of the preceding claims comprising producing a~~ of claim 1 wherein the ferroalloy welding consumable material having a chromium/carbon ratio less than 7.0.

11. (Currently Amended) The method ~~defined in any one of the preceding claims comprising producing a~~ of claim 1 whereon the ferroalloy welding consumable material having has chromium content in the range 30-65 weight%.

12. (Currently Amended) The method ~~defined in any one of the preceding claims comprising producing a~~ of claim 1 wherein the ferroalloy welding consumable material having has a chemically combined carbon content greater than 7.5 weight%

13. (Currently Amended) The method ~~defined in any one of the preceding claims~~ of claim 1 wherein step (b) comprises casting the melt into a suitable mould(s) or other casting means and thereafter breaking up the cast product into a suitable form, such as powder form.

14. (Currently Amended) The method ~~defined in any one of claims 1 to 12~~ of claim 1 wherein step (b) comprises atomising the melt with a suitable gas, such as argon, to form solid powder from the melt.

15. (Currently Amended) A chromium carbide-containing ferroalloy welding consumable material produced by the method ~~defined in any one of the preceding claims~~ of claim 1.

16. (Currently Amended) The material ~~defined in~~ of claim 15 wherein the chromium/carbon ratio is less than 7.0.

17. (Currently Amended) The material ~~defined in~~ of claim 15 ~~or claim 16~~ wherein the chromium content is in the range 30-65 weight%.

18. (Currently Amended) The material ~~defined in any one of claims~~ of claim 15 ~~to 17~~ wherein the chemically combined carbon content is greater than 7.5 weight%.

19. (Currently Amended) A method of producing a hardfacing weld deposit on a suitable substrate comprising forming a weld pool of the chromium carbide-containing ferroalloy welding consumable material ~~defined in any one of claims~~ of claim 15 ~~to 18~~ and a welding wire material on a substrate and thereafter depositing a hardfacing weld deposit of material from the weld pool on the substrate.

20. (Original) A hardfacing weld deposit on a suitable substrate produced by the method defined in claim 19.

21. (Currently Amended) The weld deposit ~~defined in~~ of claim 20 comprising a chromium/carbon ratio of less than 7.0.

22. (Currently Amended) The weld deposit ~~defined in~~ of claim 20 or claim 21 comprising a chromium content of less than 35 weight%.

23. (Currently Amended) The weld deposit ~~defined in any one of claims~~ of claim 20 to 22 comprising a combined carbon content greater than 4.0 weight%.

24. (Original) The weld deposit defined in claim 23 comprising tungsten and/or vanadium and/or titanium and/or molybdenum and/or niobium and/or boron up to a maximum of 15 weight%.